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## What is claimed:

- Sub 151 1. A transgenic Graminaceous cell comprising a transgene encoding an enzyme of the glycine betaine biosynthetic pathway.
2. The transgenic cell of claim 1 comprising a transgene encoding betaine aldehyde dehydrogenase.
- 10 3. The transgenic cell of claim 2, in which the transgene encodes betaine aldehyde dehydrogenase from *Atriplex hortensis*.
4. The transgenic cell of claim 3, in which the plasmid pRTT120 comprises the transgene.
- 15 5. The transgenic cell of claim 1, which is a turfgrass.
- Sub 20 6. The transgenic cell of claim 5, which is selected from the group consisting of Creeping Bentgrass, Perennial Ryegrass, Kentucky Bluegrass and Bermudagrass.
7. The transgenic cell of claim 1, which is salt tolerant.
- 25 8. The transgenic cell of claim 7, which grows significantly faster than equivalent untransformed cells on a 0.8% NaCl medium at the P=0.05 level of significance.
- 30 9. A transgenic plant produced from the transgenic cell of claim 1.

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10. Seeds produced from the transgenic plant of claim 9.

11. The transgenic plant of claim 9, which is  
5 salt-tolerant.

12. The transgenic plant of claim 11, which grows significantly faster than the equivalent untransformed plant under 1.2% NaCl stress at the  $P=0.05$  level of significance.

13. The transgenic plant of claim 11, which is also drought tolerant.

15                    14. A salt-tolerant transgenic Gramineaceous  
plant which expresses a transgene encoding an enzyme of  
the glycine betaine biosynthetic pathway.

15. The transgenic plant of claim 14  
20 comprising a transgene encoding betaine aldehyde  
dehydrogenase.

16. The transgenic plant of claim 15, in which  
the transgene encodes betaine aldehyde dehydrogenase  
25 from *Atriplex hortensis*.

17. The transgenic plant of claim 16, in which the plasmid pRTT120 comprises the transgene.

30            18. The transgenic plant of claim 14, which is  
a turfgrass.

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Sub 19. The transgenic plant of claim 18, which is  
selected from the group consisting of Creeping Bentgrass,  
Perennial Ryegrass, Kentucky Bluegrass and Bermudagrass.

5 20. The transgenic plant of claim 14, which  
grows significantly faster than the equivalent  
untransformed plant under 1.2% NaCl stress at the P=0.05  
level of significance.

10 21. The transgenic plant of claim 14, which is  
also drought tolerant.

Sub 22. Seeds of the transgenic plant of claim 14.

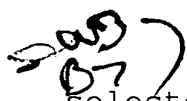
15 23. A transgenic Graminaceous plant which, as  
compared to untransformed equivalent plants, has at least  
one phenotypic characteristic selected from the group  
consisting of:

- 20 A) a significantly higher level of BAH  
activity;  
B) a significantly higher concentration of  
glycine betaine on a dry weight basis;  
C) a significantly higher growth rate during  
salt stress;  
25 D) a significantly level of drought tolerance;  
E) BAH activity that is at least 1.5 X greater  
in leaf tissue; and  
F) betaine glycine concentration that is at  
least 2 X greater in leaf tissue on a dry  
30 weight basis.

24. The transgenic plant of claim 13, which is  
a turfgrass.

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25. The transgenic plant of claim 14, which is selected from the group consisting of Creeping Bentgrass, Perennial Ryegrass, Kentucky Bluegrass and Bermudagrass.

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